



west virginia department of environmental protection

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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.: G40-C051B
Plant ID No.: 075-00002
Applicant: Appalachian Aggregates, LLC (formerly Boxley Aggregates of West Virginia, LLC)
Facility Name: Mill Point Plant
Location: Mill Point, Pocahontas County
SIC / NAICS Code: 1422 / 212312
Application Type: Modification
Received Date: December 12, 2016
Engineer Assigned: Thornton E. Martin Jr.
Fee Amount: \$1,500
Date Received: December 13, 2016
Complete Date: January 11, 2017
Applicant Ad Date: December 15, 2016
Newspaper: *The Pocahontas Times*
UTM's: Easting: 571.759 km Northing: 4224.181 km Zone: 17
Description: Applicant proposes to replace a Grizzly Feeder and Hopper, include the re-calculation of remote stockpile emissions and the addition of haulroad emissions for stone shipped off-site.

INTRODUCTION TO PROJECT

Appalachian Aggregates, LLC is applying for a revised registration under General Permit G40-C to include the replacement of a vibrating grizzly feeder (GF1) and hopper (H1). The yearly rate of the new grizzly feeder will be the same as the existing facility feed rate which is 600 tons per hour (TPH) and 5,256,000 tons per year (TPY). The facility potential to emit (PTE) has also been updated to include truck loading transfer points, haulroad emissions for trucking stone off-site, and re-calculation/combining of sixteen (16) remote open stockpiles into seven (7) remote open stockpile areas.

PERMITTING HISTORY

Boxley Aggregates of West Virginia, LLC (Boxley) was initially registered under General Permit G40 by G40-C051 in 2011. An amendment to the registration was approved in January 2014 under G40-C051A for the installation of a stand-alone agricultural lime plant. On December 31, 2015, Boxley sold the facility to Oldcastle Materials, Inc. And, effective January 08, 2016, the company name was changed to Appalachian Aggregates, LLC. The West Virginia Department of Environmental Protection, Division of Air Quality (DAQ) approved the transfer of permit G40-C015A to Appalachian Aggregates, LLC in a letter dated May 02, 2016. The current, existing permit registration is G40-C051A.

DESCRIPTION OF PROCESS

The Main Plant is comprised of primary crushing and screening operations for sized aggregate production. Final sized products are stockpiles and loaded to truck via front-end loaders. The Agricultural Lime Plant consists of crushing and screening operations with material stockpiled in a fully enclosed building to await shipment off-site. For the PTE, the hourly emissions estimate is based on the entire facility concurrently operating. Operating rates are listed in the affected source sheets of the application for the processing and conveying equipment and the equipment summary of the evaluation.

Main Plant:

Stone is hauled by front-end loader from the quarry pit and dumped in Hopper H1 with attached vibrating Grizzly Feeder GF1 TPA). The grizzly feeder transfers stone either to the jaw crusher CR1 or a bypass chute to belt conveyor BC1 (TP1). Crushed stone is transferred from the jaw crusher to belt conveyor BC1 (TP2). Water sprays at the discharge of the crusher help minimize fugitive emissions. The stone is conveyed from BC1 to BC2 (TP3) and BC2 to triple deck screen S1 (TP4). The oversize material from screen S1 is transferred via belt conveyor BC5 to stockpile OS-C (TP8) or by way of belt conveyor BC7 (TP5) to a fully enclosed bin BS1 (TP12). The mid-sized material from screen S1 is transferred to belt conveyor BC6 (TP6) then to stockpile OS-B (TP9) or by way of belt conveyor BC7 (TP5) to a fully enclosed bin BS1 (TP12). The fine material from screen S1 (TP7) is placed into stockpile OS-A via belt conveyors BC3 to BC4 (TP10) to OS-A (TP11). From the bin BS1, overflow material can drop to stockpile OS-D through a chute.

Stone is transferred out of the bin to a belt conveyor BC8 by a feeder (TP13) then dropped into an impact crusher CR2 (TP14). Water sprays at the inlet and exit of the crusher minimize fugitive emissions as the sized material is transferred to a triple deck screen S2 by belt conveyor BC9 (TP16). The over size material from screen S2 is either transferred via belt conveyors BC15 (TP17) then to BC16 (TP27) and then to screen S3 (TP28), or by way of belt conveyor BC15A (TP21) to a rotary crusher CR3 (TP34). The mid-sized material from screen S2 (TP18 & TP19) is conveyed to stockpiles OS-G (TP22) and OS-F (TP23) through belt conveyors BC14 and BC13, respectively, or to screen S3 by belt conveyors BC15 (TP17) / BC16 (TP28). The fine material from the screen S2 transfers to BC10 (TP20), then from BC10 to BC11 (TP24) and BC12 to OS-E (TP26). The fines from S2 may also be directed to screen S3 by transferring to belt conveyors BC15 (TP27) / BC16 (TP28). The material is screened through S3 with the mid-sized material (TP30 & TP31) transferred to open stockpiles OS-J and OS-I through belt conveyors BC20 (TP36) and BC21 (TP37). The oversized material (TP29) is moved in closed circuit to the rotary crusher CR3 by belt conveyors BC17 (TP33) and BC18 (TP34). The fine material from S3 (TP32) is transferred to OS-H by belt conveyors BC22 (TP38) and BC23 (TP39). Water sprays are used at the transfer points to control fugitive emissions. There are six (6) remote open stockpiles OS-K through OS-Q in which material is stored until is loaded onto trucks and shipped off-site. Numerous individual stockpiles can be inside an open stockpile area and may consist of several aggregate types.

New Lime Producing Plant:

A front-end loader will feed material into (2) 25 ton feed bins, LPBIN1 (TP40) and LPBIN2 (TP41). Belt feeders LPBC1 (TP42) and LPBC2 (TP43) transfer the material onto belt conveyor LPBC3 (TP44, TP45). Belt conveyor LPBC3 (TP46) transfers material into a cage mill crusher LPCR1. The cage mill crusher LPCR1 (TP47) discharges into a screw conveyor LPSC1 that feeds a bucket elevator LPBE1 (TP48). The bucket elevator LPBE1 discharges material onto a vibrating screen LPVS1 (TP49). The vibrating screen LPVS1 transfers material into a screw conveyor LPSC2 (TP50). The screw

conveyor LPSC2 (TP51) discharges agricultural lime into a stockpile FES-A located in a fully enclosed building. A baghouse will be utilized to control fugitive emissions from this plant.

Appalachian Aggregates, LLC will utilize the following equipment and throughput at the Mill Point facility:

Table 1: Equipment Summary

Source ID No.	Emission Unit Description (Make, Model, Serial No.)	Design Capacity		Control Device ¹	Month/Year Constructed, Reconstructed, or Modified
		TPH	TPY		
Equipment					
CR1	Cedar Rapids Jaw Crusher	600	5,256,000	WS	1998
CR2	Telsmith Horizontal Impact Crusher	600	5,256,000	WS	1999
CR3	ISC Vertical Impact Crusher	400	3,504,000	WS	1998
S1	Cedar Rapids Triple Deck Vibrating Screen	600	5,256,000	WS	1998
S2	Cedar Rapids Triple Deck Vibrating Screen	600	5,256,000	WS	1998
S3	Cedar Rapids Triple Deck Vibrating Screen	1,000	8,760,000	WS	2001
GF1	Grizzly Feeder	600	5,256,000	WS	2017
LPCR1	Steadman Cage Mill Crusher	50	438,000	BH	2014
LPVS1	Midwestern Double Deck Vibrating Screen	50	438,000	BH	2014
Conveyors					
BC1	Belt Conveyor	600	5,256,000	WS	1998
BC2	Belt Conveyor	600	5,256,000	WS	1998
BC3	Belt Conveyor	150	1,314,000	WS	1998
BC4	Belt Conveyor	150	1,314,000	WS	1998
BC5	Belt Conveyor	250	2,190,000	WS	1998
BC6	Belt Conveyor	150	1,314,000	WS	1998
BC7	Belt Conveyor	600	5,256,000	WS	1998
BC8	Belt Conveyor	600	5,256,000	WS	1998
BC9	Belt Conveyor	600	5,256,000	WS	1998
BC10	Belt Conveyor	200	1,752,000	WS	1998
BC11	Belt Conveyor	200	1,752,000	WS	1998
BC12	Belt Conveyor	200	1,752,000	WS	1998
BC13	Belt Conveyor	200	1,752,000	WS	1998
BC14	Belt Conveyor	200	1,752,000	WS	1998
BC15	Belt Conveyor	600	5,256,000	WS	1998
BC15A	Belt Conveyor	400	3,504,000	WS	2011
BC16	Belt Conveyor	1,000	8,760,000	WS	2001
BC17	Belt Conveyor	400	3,504,000	WS	2001
BC18	Belt Conveyor	400	3,504,000	WS	1998
BC19	Belt Conveyor	400	3,504,000	WS	1998
BC20	Belt Conveyor	300	2,628,000	WS	2001
BC21	Belt Conveyor	200	1,752,000	WS	2001
BC22	Belt Conveyor	500	4,380,000	WS	2001
BC23	Belt Conveyor	500	4,380,000	WS	2001
LPBC1	Belt Conveyor	400	3,500,000	FE	2014
LPBC2	Belt Conveyor	400	3,500,000	FE	2014
LPBC3	Belt Conveyor	400	3,500,000	WS	2014
LPSC1	Screw Conveyor	400	3,500,000	BH	2014
LPBE1	Bucket Elevator	400	3,500,000	BH	2014
LPSC2	Screw Conveyor	400	3,500,000	BH	2014
Storage		Tons	TPY		
BS1	Storage Bin	100	5,256,000	N	1998
LPBIN1	Feed Bin	25	219,000	N	2014
LPBIN2	Feed Bin	25	219,000	N	2014
H1	Hopper	75	5,256,000	N	2017

Stockpiles	Emission Unit Description (Make, Model, Serial No.)	Base Area (Sq. Feet)	TPY	Control Device	Month/Year Constructed, Reconstructed, or Modified
OS-A	Open Stockpile – stone	11,236	1,314,000	WS	1998
OS-B	Open Stockpile – stone	11,236	1,314,000	WS	1998
OS-C	Open Stockpile – stone	11,236	2,190,000	WS	1998
OS-D	Open Stockpile – stone	11,236	438,000	WS	1998
OS-E	Open Stockpile – stone	11,236	1,752,000	WS	1998
OS-F	Open Stockpile – stone	11,236	1,752,000	WS	1998
OS-G	Open Stockpile – stone	11,236	1,752,000	WS	1998
OS-H	Open Stockpile – stone	11,236	4,380,000	WS	1998
OS-I	Open Stockpile – stone	11,236	1,752,000	WS	1998
OS-J	Open Stockpile – stone	11,236	2,628,000	WS	1998
OS-K	Open Stockpile – stone	117,613	671,000	WS	1998
OS-L	Open Stockpile – stone	34,848	671,000	WS	1998
OS-M	Open Stockpile – stone	21,780	671,000	WS	1998
OS-N	Open Stockpile – stone	65,340	671,000	WS	1998
OS-O	Open Stockpile – stone	47,916	671,000	WS	1998
OS-P	Open Stockpile – stone	60,984	671,000	WS	1998
OS-Q	Open Stockpile – stone	28,314	671,000	WS	1998
FES-A	Enclosed Stockpile	6,000	438,000	FE	2014
Engine	Emission Unit Description (Make, Model, Serial No.)	Design Capacity (bhp/rpm)	Fuel Type	Manufactured Date	Installation Year
GEN-3	CAT 3512 diesel engine – 1616hp/1205kw	1616/1800	Diesel	May 1995	1997
Tanks	Status	Content	Volume	Throughput	Liquid Height
T01	Existing	Diesel	10,000	90,000	6'
T02	Existing	Diesel	10,000	90,000	6'

FE - Full Enclosure; FW - Full Enclosure w/water spray; PW - Partial Enclosure w/water spray; WS - Water Spray; N - None;
BH - Donaldson 108MBT8 Baghouse, Pulse Jet, 99.9% collection efficiency

DESCRIPTION OF FUGITIVE EMISSIONS

Fugitive emissions from the facility include particulate emissions from haulroads, stockpiles and work areas. The haulroad surfaces are coarse gravel and are used by trucks, endloaders and company personnel. Water is supplied to the haulroads as needed via a water truck. Water is also applied to the work areas around the stockpiles and plant by the water truck to control particulate emissions. The stockpiles will be controlled by the water truck as needed. Usually the stockpiles contain a sufficient amount of moisture from upstream water sprays to minimize particulate emissions.

The water sprays and water supply lines will be protected from freezing (winterized) by the use of thermal protection: insulation and/or heat taping of exposed areas as needed. In the event that the thermal protection or other methods of winterizing do not prevent freezing, additives may be mixed into the water for freeze proofing.

SITE INSPECTION

Dan Bauerle of the Compliance and Enforcement Section of the Division of Air Quality performed an unannounced partial on-site targeted inspection on November 24, 2014. Notes from the inspection are as follows: 'Facility spokesperson, John Burns stated that failed bucket elevator motor, occurring earlier 11/24, prevented operation of the facility's agricultural lime unit. The ag lime unit is scheduled to run following replacement of the failed elevator motor (following the Thanksgiving Holiday). Main unit, 3 crushers, etc not scheduled to operate 11/24'. The facility was given a Status Code of 41. Additionally, an

inspection conducted by Mr. Bauerle on October 23, 2014, discovered that the Cat 3512 Gen-Set used to power quarry equipment is not in compliance with NESHAPS Subpart ZZZZ. Following this inspection, the permittee issued a 11/5/2014 letter to the WV DAQ which includes a commitment to install engine catalyst, a crankcase fumes filtration system and conduct compliance certification testing complete by January 31, 2015. Based on the scope and size of the modification, the writer deemed that a site visit was not needed at this time.

Directions in application: From I-79 N, take Exit 57 for US-19 S toward Beckley, then take the WV-55 Exit toward Muddelty/Craigsville. Stay on WV-55 E for approximately 53.5 miles and site will be on the left just before the intersection of WV-55 E and Rt. 219 Seneca Trail.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emission calculations for transfer points, crushing and screening, open stockpiles, and unpaved haulroads are based on AP-42 "Compilation of Air Pollution Emission Factors" and the Air Pollution Engineering Manual and References. Engine emissions were provided by the manufacturer, Caterpillar. The estimated emission calculations were performed by the Applicants' consultant and were checked for accuracy and completeness by the writer.

Table 2: Crushing/Screening/Processing emissions summary:

Emission Source	Maximum Controlled PM Emissions		Maximum Controlled PM ₁₀ Emissions		Change in Controlled PM Emissions		Change in Controlled PM ₁₀ Emissions	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
FUGITIVE EMISSIONS								
Stockpiles	5.17	22.63	2.43	10.63	3.43	15.01	1.61	7.05
Unpaved Haulroads	187.67	733.42	55.39	216.48	108.92	499.67	41.11	173.97
Paved Haulroads	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Fugitive Emissions	192.84	756.04	57.82	227.11	112.35	514.66	42.72	181.01
POINT SOURCE EMISSIONS								
Equipment Emissions	6.18	27.05	2.22	9.72	-1.31	-5.77	-1.35	-5.91
Transfer Point Emissions	13.34	51.19	6.31	24.21	7.09	23.80	3.35	11.26
Total Point Source Emissions	19.51	78.24	8.53	33.93	5.76	18.03	2.00	5.35
TOTAL FACILITY EMISSIONS								
Total Facility Emissions	212.35	834.28	66.35	261.04	118.11	532.69	44.72	186.36

Table 3: Engine emissions summary:

Source ID	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tpy)
GEN-3	Nitrogen Oxides	37.90	49.27
	Carbon Monoxide	8.47	11.01
	Volatile Organic Compounds	0.74	0.96
	Particulate Matter-10	1.21	1.57

REGULATORY APPLICABILITY

NESHAPS and PSD have no applicability to the proposed facility. The proposed Modification of a non-metallic minerals processing plant is subject to the following state and federal rules:

45CSR7 *To Prevent and Control Particulate Matter Air Pollution From Manufacturing Processes and Associated Operations*

The facility is subject to the requirements of 45CSR7 because it meets the definition of “Manufacturing Process” found in subsection 45CSR7.2.20. The facility should be in compliance with Subsection 3.1 (no greater than 20% opacity), Subsection 3.7 (no visible emissions from any storage structure pursuant to subsection 5.1 which is required to have a full enclosure and be equipped with a control device), Subsection 4.1 (PM emissions shall not exceed those allowed under Table 45-7A), Subsection 5.1 (manufacturing process and storage structures must be equipped with a system to minimize emissions), Subsection 5.2 (minimize PM emissions from haulroads and plant premises) when the particulate matter control methods and devices proposed within application G40-C051B are in operation.

According to Table 45-7B, for a type ‘a’ source with a maximum process weight rate of 1,200,000 lb/hour, the maximum allowable emission rate is 50 lb/hour of particulate matter. The maximum emission rate is 19.51 lb/hour of particulate matter according to estimated emissions in fact sheet G40-C051B.

45CSR13 Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits, and Procedures for Evaluation

The proposed Modification is subject to the requirements of 45CSR13. The applicant submitted the proper \$1,500 application fee and published a Class I legal advertisement in *The Pocahontas Times* on December 15, 2016.

45CSR16 Standards of Performance for New Stationary Sources
40 CFR 60 Subpart OOO: Standards of Performance for Nonmetallic Mineral Processing Plants

The proposed Modification is subject to 40 CFR 60 Subpart OOO because it will occur after April 22, 2008 and the plant processes more than 25 tons of rock per hour. The proposed modification will include one (1) grizzly feeder and one (1) hopper, which are defined as affected facilities in 40 CFR 60 Subpart OOO. The proposed Modification is subject to 45CSR16, which incorporates by reference 40 CFR 60 Subpart OOO - Standards of Performance for Nonmetallic Mineral Processing Plants. The facility should be in compliance with 60.672 (b) no greater than 7% opacity from any transfer point on belt conveyors or from any other affected facility (as defined in 60.670 and 60.671) and no greater than 12% opacity from any crusher when the particulate matter control methods and devices proposed within application G40-C051B are in operation.

45CSR30 Requirements for Operating Permits

In accordance with 45CSR30 Major Source Determination, the rock crushing and screening facility will be a non-major source which is subject to NSPS Subpart OOO. The facility’s potential to emit will be 33.93 TPY of a regulated air pollutant (PM₁₀), not including fugitive emissions, which is less than the 45CSR30 threshold of 100 TPY. Therefore, the facility will continue to be subject to 45CSR30 and classified as a Title V deferred non-major source.

40CFR63 Subpart ZZZZ—National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

Appalachian Aggregates, LLC is subject to 40CFR63 Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, because GEN-3 is considered an existing area source of HAPs since the facility was constructed prior to June 12, 2006.

The proposed Modification of Appalachian Aggregates, LLC's non-metallic minerals processing plant is NOT subject to the following state and federal rules:

45CSR14 Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration

The facility will have the potential to emit 78.24 TPY of a regulated air pollutant (PM), not including fugitive emissions, which is less than the 45CSR14 threshold of 250 TPY. This facility is not listed in Table 2, and so fugitive emissions are not included when determining source applicability. Therefore, the proposed Modification is not subject to the requirements set forth within 45CSR14.

45CFR60 Subpart III: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

All engines covered by this subpart have a manufacturer's date of 2005 or later. The Caterpillar 3512 engine utilized at the facility was manufactured in 1995 and installed in 1997. Therefore, the engine is not subject to requirements set forth in 40CFR60 Subpart III.

AIR QUALITY IMPACT ANALYSIS

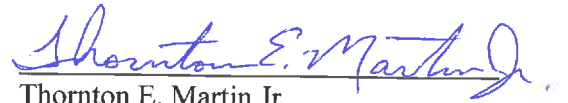
Air dispersion modeling was not performed due to the size and proposed location of this facility. This facility will be located Pocahontas County, WV, which are currently in attainment for PM (particulate matter), PM₁₀ (particulate matter less than 10 microns in diameter) and PM_{2.5} (particulate matter less than 2.5 microns in diameter).

MONITORING OF OPERATIONS

For the purposes of determining compliance with maximum throughput limits, the applicant shall maintain certified daily records and monthly records of the amount of aggregate processed. Also, the applicant shall maintain certified maintenance records. Such records shall be retained on site by the permittee for at least five (5) years and shall be made available to the Director of the Division of Air Quality or his or her duly authorized representative upon request.

RECOMMENDATION TO DIRECTOR

The information contained in this Modification application indicates that compliance with all applicable regulations should be achieved when all proposed particulate matter control methods are in operation. Due to the location, nature of the process, and control methods proposed, adverse impacts on the surrounding area should be minimized. No public comments were received. Therefore, the granting of a G40-C registration to Appalachian Aggregates, LLC . for the Modification of a crushing and screening plant located near Hillsboro, Pocahontas County, WV is hereby recommended.



Thornton E. Martin Jr.
Permit Engineer

January 11, 2017

Date